ELSEVIER

Computers & Graphics 27 (2003) III–X

COMPUTERS &GRAPHICS

www.elsevier.com/locate/cag

List of Contents

NUMBER 1

In this issue the special topic is
IBERO-AMERICAN CO-OPERATION IN COMPUTER GRAPHICS
Guest Editors: Manuel Próspero dos Santos, Xavier Pueyo, Luiz Velho

Manuel Próspero dos Santos, Xavier Pueyo and **Luiz Velho**	1	Ibero-American co-operation in computer graphics
Francisco Abad, Emilio Camahort and **Roberto Vivó**	5	Integrating synthetic objects into real scenes
Luis Marcelino, Norman Murray and **Terrence Fernando**	19	A constraint manager to support virtual maintainability
Á. L. García, J. Ruiz de Miras and **F.R. Fieto**	27	Free-form solid modelling based on extended simplicial chains using triangular Bézier patches
Imma Boada and **Isabel Navazo**	41	3D texture-based hybrid visualizations
R. Joan-Arinyo, M.V. Luzón and **A. Soto**	51	Genetic algorithms for root multiselection in constructive geometric constraint solving
Manuel J. Fonseca and **Joaquim A. Jorge**	61	Towards content-based retrieval of technical drawings through high-dimensional indexing
		Technical Section
Arnulph Fuhrmann, Clemens Groß, Volker Luckas and **Andreas Weber**	71	Interaction-free dressing of virtual humans
Wu Zhongke, Lin Feng and **Seah Hock Soon**	83	Topology preserving voxelisation of rational Bézier and NURBS curves
E.A. Karabassi, G. Papaioannou, C. Fretzagias and **T. Theoharis**	91	Exploiting multiresolution models to accelerate ray tracing
Anna Puig, Lluís Perez-Vidal and **Dani Tost**	99	3D simulation of tool machining

M. Sarfraz 107 A rational cubic spline for the visualization of monotonic data: an alternate approach

Ernesto Bribiesca 123 Scanning-curves representation for the coverage of surfaces using chain coding

Hui Chen and **Wenping Wang** 133 On intrinsic representations of 3D polygons for shape blending

Chaos and Graphics

Paul Sherman and **John C. Hart** 143 Direct manipulation of recurrent models

153 List of reviewers in 2000/2001

156 Announcements

162 Past/Future Issues

NUMBER 2

In this issue the special topic is
VIRTUAL REALITY AND ITS APPLICATION
Guest Editors: Zhigeng Pan, Jiaoying Shi

Zhigeng Pan and **Jiaoying Shi** 163 Guest editor's introduction

Ke Deng, Lifeng Wang, Zhouchen Lin, Tao Feng and **Zhidong Deng** 169 Correction and rectification of light fields

Yigang Wang, Bernd Fröhlich and **Martin Göbel** 179 Selective refinement of progressive meshes using vertex hierarchies

Chih-Chun Chen, Jung-Hong Chuang, Bo-Yin Lee, Wei-Wen Feng and **Ting Chiou** 189 Rendering complex scenes using spatial subdivision and textured LOD meshes

M. Osama Alhalabi, Susumu Horiguchi and **Susumu Kunifuji** 205 An experimental study on the effects of Network delay in Cooperative Shared Haptic Virtual Environment

Yiyu Cai, Cheekong Chui, Xiuzi Ye, Yaoping Wang and **James H. Anderson** 215 VR simulated training for less invasive vascular intervention

ChangHoon Park, Heedong Ko and **Taiyun Kim** 223 NAVER: Networked and Augmented Virtual Environmental aRchitecture; design and implementation of VR framework for Gyeongju VR Theater

Zhigeng Pan, Weiwei Xu, Jin Huang, Mingmin Zhang and **Jiaoying Shi** 231 Easybowling: a small bowling machine based on virtual simulation

Technical Section

Marko Lamot and **Borut Žalik** 239 A fast polygon triangulation algorithm based on uniform plane subdivision

Charlie C.L. Wang and **Matthew M.F. Yuen** 255 Freeform extrusion by sketched input

Jing Yang, Matthew O. Ward and **Elke A. Rundensteiner** 265 Interactive hierarchical displays: a general framework for visualization and exploration of large multivariate data sets

György Antal, László Szirmay-Kalos, Ferenc Csonka and **Csaba Kelemen** 285 Multiple strategy stochastic iteration for architectural walkthroughs

S. Gibson, R.J. Hubbold, J. Cook and **T.L.J. Howard** 293 Interactive reconstruction of virtual environments from video sequences

Chaos and Graphics

Asok K. Sen 303 A three-dimensional approach to graphic design

Short Applications

Nikita Kojekine, Ichiro Hagiwara and **Vladimir Savchenko** 311 Software tools using CSRBFs for processing scattered data

321 Announcements

325 Past/Future Issues

NUMBER 3

In this issue the special topic is
EDUCATION
Guest Editors: James L. Mohler, Lars Kjelldahl

Editorial

James L. Mohler and **Lars Kjelldahl** 327 Special issue on education

Anne Morgan Spalter and **Andries van Dam** 329 Problems with using components in educational software

Hannes Kaufmann and **Dieter Schmalstieg** 339 Mathematics and geometry education with collaborative augmented reality

Kevin L. Novins 347 Filling the gaps: a research-driven approach to learning computer graphics

Fiona Bailey and **Magnus Moar** 353 The VERTEX project: designing and populating shared 3D virtual worlds in the primary (elementary) classroom

Tiffany Holmes 361 What do computers eat? Teaching beginners to think critically about technology and art

Sampson D. Asare, Petros M. Mashwama and **Steve Cunningham** 369 Building computer graphics education in southern Africa

Technical Section

Ding Huang and **Hong Yan** 373 NURBS curve controlled modelling for facial animation

Hakan Berk, Cevdet Aykanat and **Uğur Güdükbay** 387 Direct volume rendering of unstructured grids

Hsueh-Ting Chu and **Chaur-Chin Chen** 407 On bounding boxes of iterated function system attractors

Ying Tang, Jin Wang, Hujun Bao and **Qunsheng Peng** 415 RBF-based constrained texture mapping

R.G. Laycock and **A.M. Day** 423 Rapid generation of urban models

Duke Gledhill, Gui Yun Tian, Dave Taylor and **David Clarke** 435 Panoramic imaging—a review

Chaos & Graphics

Angela M. Coxe and **Clifford A. Reiter** 447 Fuzzy hexagonal automata and snowflakes

455 Announcements

463 Past/Future Issues

465 Call for Papers

NUMBER 4

Technical Section

Peter R. Bono 467 Associate editor's introduction

Peter R. Bono 468 Curriculum vitae

M.R. Asim and **K.W. Brodlie** 469 Curve drawing subject to positivity and more general constraints

E. Cerezo and **F.J. Seron** 487 An approach to the simulation of the sea as participating medium

Bogdan Smolka 503 On the new robust algorithm of noise reduction in color images

Oliver Bimber, Bernd Fröhlich, Dieter Schmalstieg and **L. Miguel Encarnaão** 515 Real-time view-dependent image warping to correct non-linear distortion for curved Virtual Showcase displays

G.A. Triantafyllidis, M. Varnuska, D. Sampson, D. Tzovaras and **M.G. Strintzis** 529 An efficient algorithm for the enhancement of JPEG-coded images

Tomek Martyn 535 Tight bounding ball for affine IFS attractor

Hélio Lopes, Jarek Rossignac, Alla Safonova, Andrzej Szymczak and **Geovan Tavares** 553 Edgebreaker: a simple implementation for surfaces with handles

Jiří Bittner, Jan Přikryl and **Pavel Slavík** 569 Exact regional visibility using line space partitioning

Beom-Soo Oh and **Chang-Hun Kim** 581 Progressive reconstruction of 3D objects from a single free-hand line drawing

Vlastimil Havran and **Werner Purgathofer** 593 On comparing ray shooting algorithms

James R. Miller 605 The remote application controller

F. Bellotti, R. Berta, A. De Gloria and **M. Margarone** 617 MADE: developing edutainment applications on mobile computers

Chaos and Graphics

V. Drakopoulos, N. Mimikou and **T. Theoharis** 635 An overview of parallel visualisation methods for Mandelbrot and Julia sets

Education

Frank Hanisch and **Wolfgang Straßer** 647 Adaptability and interoperability in the field of highly interactive web-based courseware

657 Announcements

665 Past/Future Issues

NUMBER 5

In this issue the special topic is

GRAPHICS HARDWARE

Guest Editors: Günther Knittel, Bengt-Olaf Schneider

Günter Knittel and **Bengt-Olaf Schneider** 667 Introduction

Graphics Hardware

Peter D. Kirchner, James T. Klosowski, Peter Hochschild and **Richard Swetz** 669 Scalable visualization using a network-attached video framebuffer

William J. Blanke and **Chandrajit Bajaj** 681 Active visualization in a multidisplay immersive environment

Jörg Schmittler, Alexander Leidinger and **Philipp Slusallek** 693 A virtual memory architecture for real-time ray tracing hardware

Marcos Sanchez-Elez, Haitao Du, Nozar Tabrizi, Yun Long, Nader Bagherzadeh and **Milagros Fernandez** 701 Algorithm optimizations and mapping scheme for interactive ray tracing on a reconfigurable architecture

H. Chen, B. Vettermann, J. Hesser and **R. Männer** 715 Innovative computer architecture for real-time volume rendering

Kwan-Liu Ma, Eric B. Lum and **Shigeru Muraki** 725 Recent advances in hardware-accelerated volume rendering

Technical Section

Edouard Lamboray, Aaron Zollinger, Oliver G. Staadt and **Markus Gross** 735 Interactive multimedia streams in distributed applications

J.C. Iehl and **B. Péroche** 747 Towards perceptual control of physically based spectral rendering

Xiaogang Jin, Hanqiu Sun and **Qunsheng Peng** 763 Subdivision interpolating implicit surfaces

T. Franzetti, A.M. Day and **D.B. Arnold** 773 A fan growing algorithm for efficient vertex caching

B. Žalik, A. Jezernik and **K. Rizman Žalik** 791 Polygon trapezoidation by sets of open trapezoids

Miroslav Fribert 801 Separation model of colour regions in a halftone print

Jianghong Liu and **Haiming Gu** 807 Image retrieval in various domains

Chaos and Graphics

Branka Spehar, Colin W.G. Clifford, Ben R. Newell and **Richard P. Taylor** 813 Universal aesthetic of fractals

821 Announcements

826 Past/Future Issues

827 Call for Papers

NUMBER 6

In this issue the special topic is
SITUATION AND TASK AWARENESS COMPUTING
Guest Editors: David Duke, Thomas Kirste

Sébastien Thon and **Djamchid Ghazanfarpour**	829	Computers & Graphics Best Paper Award (2002)
T. Kirste and **D. Duke**	835	Introduction: Situation- and task-awareness computing
D. Duke	837	Curriculum vitae
T. Kirste	838	Curriculum vitae
Florian Michahelles, Peter Matter, Albrecht Schmidt and **Bernt Schiele**	839	Applying wearable sensors to avalanche rescue
Nicolas Villar, Albrecht Schmidt, Gerd Kortuem and **Hans-Werner Gellersen**	849	Interacting with proactive public displays
Rachid Hourizi and **Peter Johnson**	859	Towards an explanatory, predictive account of awareness
Young J. Kim and **Christoph M. Hoffmann**	873	Enhanced battlefield visualization for situation awareness
Jens Weidenhausen, Christian Knoepfle and **Didier Stricker**	887	Lessons learned on the way to industrial augmented reality applications, a retrospective on ARVIKA
Dirk Balfanz, Jürgen Schirmer, Matthias Grimm and **Mohammad-Reza Tazari**	893	Mobile situation-awareness within the project map
Norbert Reithinger, Gerd Herzog and **Alassane Ndiaye**	899	Situated multimodal interaction in SMART KOM
		Technical Section
Robert S. Laramee	905	FIRST: a flexible and interactive resampling tool for CFD simulation data
Albert Wiltsche	917	C^1- and C^2-continuous spline-interpolation of a regular triangular net of points
J. Rodríguez and **D. Ayala**	931	Fast neighborhood operations for images and volume data sets
Xiaoping Qian and **Deba Dutta**	943	Heterogeneous object modeling through direct face neighborhood alteration

Archana Sangole and **George K. Knopf** 963 Visualization of randomly ordered numeric data sets using spherical self-organizing feature maps

Chaos and Graphics

Slawek Nikiel and **Adam Goinski** 977 Generation of volumetric escape time fractals

983 Announcements

988 Past/Future Issues

I Contents/Author Index for Vol 27

ELSEVIER

Computers & Graphics 27 (2003) XI–XII

COMPUTERS &GRAPHICS

www.elsevier.com/locate/cag

Author Index

Abad, F., 5
Alhalabi, M.O., 205
Anderson, J.H., 215
Antal, G., 285
Arnold, D.B., 773
Asare, S.D., 369
Asim, M.R., 469
Ayala, D., 931
Aykanat, C., 387

Bagherzadeh, N., 701
Bailey, F., 353
Bajaj, C., 681
Balfanz, D., 893
Bao, H., 415
Bellotti, F., 617
Berk, H., 387
Berta, R., 617
Bimber, O., 515
Bittner, J., 569
Blanke, W.J., 681
Boada, I., 41
Bono, P.R., 467, 468
Bribiesca, E., 123
Brodlie, K.W., 469

Cai, Y., 215
Camahort, E., 5
Cerezo, E., 487
Chen, C.-C., 189, 407
Chen, H., 133, 715
Chiou, T., 189
Chu, H.-T., 407
Chuang, J.-H., 189
Chui, C., 215
Clarke, D., 435
Clifford, C.W.G., 813
Cook, J., 293
Coxe, A.M., 447
Csonka, F., 285
Cunningham, S., 369

Day, A.M., 423, 773
De Gloria, A., 617
Deng, K., 169
Deng, Z., 169
Drakopoulos, V., 635
Du, H., 701
Duke, D., 835, 837
Dutta, D., 943

Encarnaão, L.M., 515

Feng, L., 83
Feng, T., 169
Feng, W.-W., 189
Fernandez, M., 701
Fernando, T., 19
Fieto, F.R., 27
Fonseca, M.J., 61
Franzetti, T., 773
Fretzagias, C., 91
Fribert, M., 801
Fröhlich, B., 179, 515
Fuhrmann, A., 71

García, Á.L., 27
Gellersen, H.-W., 849
Ghazanfarpour, D., 829
Gibson, S., 293
Gledhill, D., 435
Göbel, M., 179
Goinski, A., 977
Grimm, M., 893
Groß, C., 71
Gross, M., 735
Gu, H., 807
Güdükbay, U., 387

Hagiwara, I., 311
Hanisch, F., 647
Hart, J.C., 143
Havran, V., 593
Herzog, G., 899
Hesser, J., 715
Hochschild, P., 669
Hoffmann, C.M., 873
Holmes, T., 361
Horiguchi, S., 205
Hourizi, R., 859
Howard, T.L.J., 293
Huang, D., 373
Huang, J., 231
Hubbold, R.J., 293

Iehl, J.C., 747

Jezernik, A., 791
Jin, X., 763
Joan-Arinyo, R., 51
Johnson, P., 859
Jorge, J.A., 61

Karabassi, E.A., 91
Kaufmann, H., 339
Kelemen, C., 285
Kim, C.-H., 581
Kim, T., 223
Kim, Y.J., 873
Kirchner, P.D., 669
Kirste, T., 835, 838
Kjelldahl, L., 327
Klosowski, J.T., 669
Knittel, G., 667
Knoepfle, C., 887
Knopf, G.K., 963
Ko, H., 223
Kojekine, N., 311
Kortuem, G., 849
Kunifuji, S., 205

Lamboray, E., 735
Lamot, M., 239
Laramee, R.S., 905
Laycock, R.G., 423
Lee, B.-Y., 189
Leidinger, A., 693
Lin, Z., 169
Liu, J., 807
Long, Y., 701
Lopes, H., 553
Luckas, V., 71
Lum, E.B., 725
Luzón, M.V., 51

Ma, K.-L., 725
Männer, R., 715
Marcelino, L., 19
Margarone, M., 617
Martyn, T., 535
Mashwama, P.M., 369
Matter, P., 839
Michahelles, F., 839
Miller, J.R., 605
Mimikou, N., 635
Moar, M., 353
Mohler, J.L., 327
Morgan Spalter, A., 329
Muraki, S., 725
Murray, N., 19

Navazo, I., 41
Ndiaye, A., 899

Newell, B.R., 813
Nikiel, S., 977
Novins, K.L., 347

Oh, B.-S., 581

Pan, Z., 163, 231
Papaioannou, G., 91
Park, C.H., 223
Peng, Q., 415, 763
Perez-Vidal, L., 99
Péroche, B., 747
Přikryl, J., 569
Próspero dos Santos, M., 1
Pueyo, X., 1
Puig, A., 99
Purgathofer, W., 593

Qian, X., 943

Reiter, C.A., 447
Reithinger, N., 899
Rizman Žalik, K., 791
Rodríguez, J., 931
Rossignac, J., 553
Ruiz de Miras, J., 27
Rundensteiner, E.A., 265

Safonova, A., 553
Sampson, D., 529
Sanchez-Elez, M., 701
Sangole, A., 963
Sarfraz, M., 107
Savchenko, V., 311
Schiele, B., 839
Schirmer, J., 893
Schmalstieg, D., 339, 515
Schmidt, A., 839, 849
Schmittler, J., 693
Schneider, B.-O., 667
Sen, A.K., 303
Seron, F.J., 487
Sherman, P., 143
Shi, J., 163, 231
Slavík, P., 569
Slusallek, P., 693
Smolka, B., 503
Soon, S.H., 83
Soto, A., 51
Spehar, B., 813
Staadt, O.G., 735
Straßer, W., 647
Stricker, D., 887
Strintzis, M.G., 529
Sun, H., 763
Swetz, R., 669
Szirmay-Kalos, L., 285
Szymczak, A., 553

Tabrizi, N., 701
Tang, Y., 415
Tavares, G., 553
Taylor, D., 435
Taylor, R.P., 813
Tazari, M.-R., 893
Theoharis, T., 91, 635
Thon, S., 829
Tian, G.Y., 435
Tost, D., 99
Triantafyllidis, G.A., 529
Tzovaras, D., 529

van Dam, A., 329
Varnuska, M., 529
Velho, L., 1
Vettermann, B., 715
Villar, N., 849
Vivó, R., 5

Wang, C.C.L., 255
Wang, J., 415
Wang, L., 169
Wang, W., 133
Wang, Y., 179, 215
Ward, M.O., 265
Weber, A., 71
Weidenhausen, J., 887
Wiltsche, A., 917

Xu, W., 231

Yan, H., 373
Yang, J., 265
Ye, X., 215
Yuen, M.M.F., 255

Žalik, B., 239, 791
Zhang, M., 231
Zhongke, W., 83
Zollinger, A., 735